## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE.

Applicant : Peter Richardson

Art Unit : 1623

Serial No.: 10/537,564

Examiner: Lawrence E. Crane, Ph.D.

Filed

Conf. No.: 4551

: August 28, 2006

Title

: USE OF SPONGOSINE FOR THE TREATMENT OF PAIN

## MAIL STOP AMENDMENT

Commissioner for Patents P.O. Box 1450

Alexandria, VA 22313-1450

## INFORMATION DISCLOSURE STATEMENT

Applicants request consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request. A copy of a communication from a foreign patent office in a PCT application PCT/GB2003/005379 is also enclosed.

The Examiner's attention is brought to Applicant's U.S. Applications Serial No. 10/547,454, filed June 28, 2006, Serial No. 10/547,455, filed July 26, 2006, Serial No. 10/547,462, filed October 26, 2006, and Serial No. 10/598,520, filed September 1, 2006.

The late submission fee under §1.17(p) in the amount of \$180 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06 1050.

Respectfully submitted,

Reg. No. 54,961

Customer No. 26181 Fish & Richardson P.C. Telephone: (650) 839-5070 Facsimile: (650) 839-5071

21695401 doc

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attomey's Docket No. 13425-170US1	Application No. 10/537,564	
		Applicant Peter Richardson		
(Use several shee	ts if necessary)	Filing Date	Group Art Unit	
(37 CFR §1,98(b))		August 28, 2006	1623	

	U.S. Patent Documents						
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	3,936,439	02/03/1976	Marumoto, et al.			
	AB	4,225,591	09/30/1980	Marumoto, et al.			
	AC	4,255,565	03/10/1981	Marumoto, et al.			
	AD	4,705,758	11/10/1987	Bruns			
	AE	5,877,180	03/02/1999	Linden, et al.			

	Foreign Patent Documents or Published Foreign Patent Applications							
Examiner	Desig	Document	Publication Country or			Translation		
Initial	. ID	Number	Date	Patent Office	Class	Subclass	Yes	No
	AF	AU 49412/72	05/30/1974	Australia				
	AG	DE 2258378	06/14/1973	Germany			Corresponding to AU 4941272	
	AH	FR 2162128	07/13/1973	France			Corresponding to AU 4941272	
	AI	WO 199638728	12/05/1996	WIPO				
	AJ	WO 199934804	07/15/1999	WIPO				
	AK	WO 2004079329	09/16/2004	WIPO				

(	Other Documents (include Author, Title, Date, and Place of Publication)			
Examiner	xaminer Desig.			
Initial	ID D	Document		
	AL	"Aldrich Handbook of Fine Chemicals and Laboratory Equipment," 1015-1016, (2000); XP002366927.		
	AM	Askalan, R. et al., "Role of Histidine Residues in the Adenosine A2A Receptor Ligand Binding Site," <i>Journal of Neurochemistry</i> , 63(4):1477-84, (1994); XP001196996.		
AO Potassium Conductance," The American Journal of Physiology, 224:H734-H737, (1983).  AP Belfrage, M. et al., "The Safety and Efficacy of Intrathecal Adenosine in Patients with Chron Neuropathic Pain," Anesthesia and Analgesia, 89(1):15-42, (1999); XP009027670.  Bhakuni, D., "Biological Activity of Marine Nucleosides and their Analogues," Proceedings AQ Indian National Science Academy. Part B Biological Sciences, 65(Part 2):97-112, (1995); XP001165752.  Bressi, J. et. al., "Adenosine Analogues as Inhibitors of Trypanosoma Brucei Phosphoglycera		Methylisoguanosine," Journal of Medicinal Chemistry, 24:947-54, (1981); XP002225573.		
		Belardinelli, L. & Isenberg, G., "Isolated Atrial Myocytes: Adenosine and Acetylcholine Increase Potassium Conductance," <i>The American Journal of Physiology</i> , 224:H734-H737, (1983).		
		Belfrage, M. et al., "The Safety and Efficacy of Intrathecal Adenosine in Patients with Chronic Neuropathic Pain," Anesthesia and Analgesia, 89(1):136-42, (1999); XP009027670.		
		XP001165752.		
		Bressi, J. et. al., "Adenosine Analogues as Inhibitors of Trypanosoma Brucei Phosphoglycerate Kinase: Elucidation of a Novel Binding Mode for a 2-Amino-N6-Substituted Adenosine," <i>Journal of Medicinal Chemistry</i> , 43(22):4135-50, (2000); XP000999137.		

Examiner Signature

Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 U.S. Department of Commerce (Modified) Patent and Trademark Office		Attorney's Docket No. 13425-170US1	Application No. 10/537,564
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Peter Richardson	
		Filing Date August 28, 2006	Group Art Unit 1623

	Other Documents (include Author, Title, Date, and Place of Publication)				
Examiner Initial	Desig.	Document			
	AS	Collins, S. et al., "The Effect of GR190178, a Selective Low-Efficacy Adenosine A1 Receptor Agonist, on the Treatment of Neuropathic Hyperalgesia in the Rat," British Journal of Pharmacology, 133(Proceedings Supplement):			
	AT	Daly, J. et al., "Structure-Activity Relationships for Nó-Substituted Adenosines at a Brain A1- Adenosine Receptor with a Comparison to an A2-Adenosine Receptor Regulating Coronary Blood Flow," Biochemical Pharmacology, 35(15):2467-81 (1986) XP009010090			
	AU	Dan, K., "Nerve Block Therapy and Postherpetic Neuralgia," Critical Reviews in Physical and Rehabilitation Medicine, 7(2):93-112 (1995) Embase Database Accession No. EMB-1995373280. XP002273335			
	AV	De Zwart, M. et al., "5'-N-Substituted Carboxamidoadenosines as Agonists for Adenosine Receptors," Journal of Medicinal Chemistry, 42(8): 1384-92 (1999) XP001002032			
	AW	Deghati, P. et al., ""Regioselective Nitration of Purine Nucleosides: Synthesis of 2-Nitroadenosine and 2-Nitroinosine," <i>Tetrahedron Letters</i> , 41(8):1291-5 (2000) XP004188609			
	AX	Feoktistov, I. et al., "Adenosine A2B Receptors: A Novel Therapeutic Target in Asthma?," Trends in Pharmacological Sciences, 19(4):148-53 (1998) XP002287445			
	AY	Fishman, P. et al., "A3 Adenosine Receptor as a Target for Cancer Therapy," Anti-Cancer Drugs, 13(5):437-43 (2002) XP009024520			
	AZ	Hiley, C. et al., "Effects of pH on Responses to Adenosine, CGS 21680, Carbachol and Nitroprusside in the Isolated Perfused Superior Mesenteric Arterial Bed of the Rat," British Journal of Pharmacology, 116(6):2641-2646 (1995) XP008032448			
	AAA	Jiang, Q. et al., "Mutagenesis Reveals Structure-Activity Parallels Between Human A2A Adenosine Recveptors and Biogenic Amine G Protein-Coupled Receptors," <i>Journal of Medicinal Chemistry</i> , 40(16):2588-95 (1997) XP002287314			
	ABB	Kaul, P. et al., "Adenosine Agonist of Marine Origin Indicative of Two Types of Adenosinergic Receptors," Pharmacologist, 23(3):540 (1981) XP009027638			
	ACC	Keeling, S. et al., "The Discovery and Synthesis of Highly Potent, A2a Receptor Agonists,"  Bioorganic and Medicinal Chemistry Letters, 10(4):403-6 (2000) XP004189943			
	ADD	Kirk, I. et al., "Further Characterization of [3H]-CGS 21680 Binding Sites in the Rat Striatum and Cortex," British Journal of Pharmacology, 114(2):537-43 (1995) XP008032472			
	AEE	Klitgaard, H. et al., "Contrasting Effects of Adenosine A <sub>1</sub> and A <sub>2</sub> Receptor Ligands in Different Chemoconclusive Rodent Models," <i>European Journal of Pharmacology</i> , 242:221-8 (1993)			
	AFF	Knabb, R. et al., "Consistent Parallel Relationships Armong Myocardial Oxygen Consumption, Coronary Blood Flow, and Pericardial Infusate Adenosine Concentration with Various Interventions and Beta-Blockade in the Dog," Circulation Research, 53:33-41 (1983)			
	AGG	König, G., "Meeresorganismen als Quelle Pharmazeutisch Bedeutsamer Naturstoffe," Deutsche Apotheker Zeitung, 132(14):673-83 (1992) XP002255617			
	АНН	Marumoto, R. et al. "Synthesis and Coronary Vasodilating Activity of 2-Substituted Adenosines," Chemical and Pharmaceutical Bulletin, 23(4):759-74 (1975) XP002154408			
	AII	Matova, M. et al. "QSAR Analysis of 2-Alkyloxy and 2-Aralkyloxy Adenosine A1- and A2- Agonists," European Journal of Medicinal Chemistry, 32(6):505-13 (1997) XP004088461			
	AJJ	Matsuda et al., Nucleosides and Nucleotides. XXVII. Synthesis of 2- and 8-Cyanoadenosines and their Derivatives," Chemical and Pharmaceutical Bulletin, 27(1):183-92 (1979) XP002127436			

Examiner Signature Date Considered EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with

Substitute Form PTO-1449 (Modified)			Application No. 10/537,564
		Applicant Peter Richardson	
(Use several s (37 CFR §1.98(b))	sheets if necessary)	Filing Date August 28, 2006	Group Art Unit 1623

	Other Documents (include Author, Title, Date, and Place of Publication)				
Examiner	Desig.				
Initial	ID	Document			
		Matsuda, A. et al., "Nucleosides and Nucleotides. 103. 2-Alkyladenosines: a Novel Class of			
	AKK	Selective Adenosine A2 Receptor Agonists with Potent Antihypertensive Effects," Journal of			
		Medicinal Chemistry, 35:241-52 (1992) XP002170995			
	ALL	Miles, R. et al., "Nucleic Acid Related Compounds," Journal of the American Chemical Society, 117:5951-7 (1995) XP002366161			
	1301	Nair, V. et al., "Novel, Stable Cogeners of the Antiretroviral Compound 2', 3'-Dideoxyadenosine,"			
	AMM	Journal of the American Chemical Society, 111(22):8502-4 (1989) XP001105896			
	ANN	Ojha, L. et al., "A Simple Method for Synthesis of Spongosine, Azaspongosine, and their			
	AININ	Antiplatelet Effects," Nucleosides and Nucleotiodes, 14(9-10):1889-1900 (1995) XP009027643			
	AOO	Okusa, M., "A2A Adenosine Receptor: A Novel Therapeutic Target in Renal Disease," American			
	AUU	Journal of Physiology, 282(1 Part 2):F10-F18 (2002) XP002287448			
	APP	Rieger, J.M. et al., "Design, Synthesis, and Evaluation of Novel A2A Adenosine Receptor			
	AFF	Agonists," Journal of Medicinal Chemistry, 44:531-9 (2001) XP002222174			
	AQQ	Ribeiro, J. et al., "Adenosine Receptors in the Nervous System: Pathophysiological Implications,"			
	AQQ	Progress in Neurobiology, 68(6):377-92 (2002) XP002287447			
	ARR	Sawynok, J. "Adenosine Receptor Activation and Nociception," European Journal of			
AKN		Pharmacology, 317(1):1-11 (1998) XP002273334			
	ASS	Schaeffer, H. et al., "Synthesis of Potential Anticancer Agents. XIV. Ribosides of 2, 6-Disubstituted			
	AUU	Purines," Journal of the American Chemical Society, 80:3738-42 (1958) XP002300926			
1		Smith, J. et al., "The Effects of Reduced pH on A2B Adenosine Receptor-Evoked Cyclic AMP			
	ATT	Generation in the Guinea-Pig Cerebral Cortex," British Journal of Pharmacology, 123 (Proc.			
1		Suppl.): 195p (1998). Meeting of the British Pharmacological Society Held Jointly with the Dutch			
		Pharmacological Society (Dec. 10-12, 1997) XP008032489			
	AUU	Sullivan, G. et al., "Role of A2A Adenosine Receptors in Inflammation," Drug Development			
	1100	Research, 45(3/4):103-12 (1998) XP000978332			
	AVV	Ueeda, M. et al., "2-Alkoxyadenosines: Potent and Selective Agonists at the Coronary Artery A2			
		Adenosine Receptor," Journal of Medicinal Chemistry, 34:1334-9 (1991) XP002225574			
	AWW	Ueeda, M. et al., "2-Aralkoxyadenosines: Potent and Selective Agonists at the Coronary Artery A2			
		Adenosine Receptor," Journal of Medicinal Chemistry, 34(4):1340-4 (1991) XP004088461			
		Umino, T. et al., "Nucleosides and Nucleotides. 200. Reinvestigation of 5'-N-			
	AXX	Ethylcarboxamidoadenosine Derivatives: Structure-Activity Relationships for P(3) Purinoceptor-			
	-	Like Proteins," Journal of Medicinal Chemistry, 44:208-14 (2001) XP002366162			
	43737	Vittori, S. et al., '2-Alkenyl and 2-Alkyl Derivatives of Adenosine and Adenosine-5'-N-			
	AYY	Ethyluronamide: Different Affinity and Selectivity of E- and Z-Diastereomers at A2A Adenosine			
		Receptors," Journal of Medicinal Chemistry, 39:4211-7 (1996) XP002366163			
	AZZ	Copy of International Search Report for PCT/GB2003/05379, by Examiner S. Allnutt,- dated March			
		22, 2006.			

Examiner Signature	Date Considered
EVALUATED LIFE AND ADDRESS OF STREET	t in conformance and not appointered. Include population with